Service Manual

TROY-BILT CHAIN SAW - MODEL FS55 TB 4920CC

NOTE: These materials are for use by trained technicians experienced in the service and repair of outdoor power equipment of the kind described in this publication, and are not intended for use by untrained or inexperienced individuals. These materials are intended to provide supplemental information to assist the trained technician. Untrained or inexperienced individuals should seek the assistance of an experienced and trained professional. Read, understand, and follow all instructions and use common sense when working on power equipment. This includes the contents of the product's Operators Manual, supplied with the equipment. No liability can be accepted for any inaccuracies or omission in this publication, although care has been taken to make it as complete and accurate as possible at the time of publication. However, due to the variety of outdoor power equipment and continuing product changes that occur over time, updates will be made to these instructions from time to time. Therefore, it may be necessary to obtain the latest materials before servicing or repairing a product. The company reserves the right to make changes at any time to this publication without prior notice and without incurring an obligation to make such changes to previously published versions. Instructions, photographs and illustrations used in this publication are for reference use only and may not depict actual model and component parts. © Copyright 2005 MTD Products Inc. All Rights Reserved.

MTD Products LLC - Product Training and Education Department

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Troy-Bilt Chain Saw

Model FS55 - TB4920CC

TROY-BILT CHAIN SAW - MODEL FS55 TB 4920CC

GENERAL INFORMATION

- 55cc Displacement - Family 4MHXS.0555AA EM
- The Troy-Bilt models are all AV - Anti-Vibration.
- This engine conforms to 2004 U.S. EPA PH 2 Emission Regulations.
- 20” Blade w/ INTENZ by Oregon. Incorporates chain tension adjustment on the blade bar. Bar # 9040-31B203
- Chain # 9220-31B203 (20”-78DL)

THIS SAW FEATURES OUR SPRING ASSIST STARTING SYSTEM.

- The system allows the customer to pull the recoil rope at any pace they please, yet still generate enough force to start the engine.
- The system is simple; it consists of a recoil pulley assembly, which includes an accumulator spring. As the rope is pulled, the accumulator spring winds up. When the force on the accumulator spring over-comes the engine compression, it releases its accumulated energy, spinning the crankshaft rapidly.

This Service Manual is a supplement to the Operator’s Manual. Read, understand and follow all safety procedures before operating or servicing this chain saw. Refer to the Owners Manual for procedures for proper setup and operation.

IMPORTANT: Prior to servicing the chain saw, remove the spark plug wire from the spark plug.

WARNING: Never perform maintenance when the engine is hot, to avoid any chance of burning hands or fingers.

1. AIR FILTER

1.1. Using a T-25 Torx Driver, loosen the cover retaining screws. Lift off the cover. See Figure 1.

Figure 1

1.2. Remove the air filter. See Figure 2.

Figure 2

1.3. Wash filter in clean, warm, soapy water. Rinse in clear, cool water. Air dry completely. See Figure 3.

Figure 3

NOTE: It is advisable to have a supply of spare filters.

1.4. Install air filter.

1.5. Install engine / air filter cover. Make sure cover fits properly.

1.6. Tighten the cover retaining screws securely.

2. FUEL FILTER

2.1. Remove air box cover and air filter.

2.2. Disconnect fuel hose from the carburetor fitting.

NOTE: You may not need to disconnect the fuel hose to gain access to the filter.

2.3. Pull fuel filter out of tank with a bent wire or long needle nosed pliers. See Figure 4.

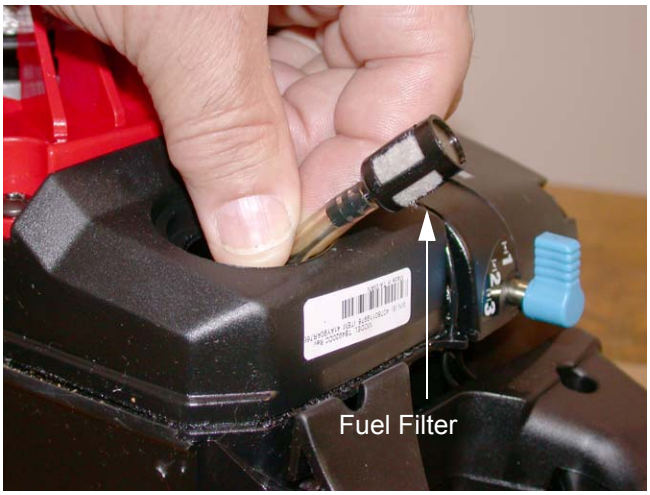

Figure 4

2.4. Disconnect filter and discard.

NOTE: Do not pull hose completely out of tank.

2.5. Install a new fuel filter on hose and pull hose/filter assembly back into tank so filter is positioned in front right corner.

2.6. Reconnect fuel hose to carburetor fitting.

2.7. Replace air filter and air box cover.

3. CHAIN OIL FILTER

NOTE: If the chain oiler fails to work properly, the cause may be a clogged filter. Drain oil tank before changing filter.

NOTE: Make sure you have a new filter and a length of hose before beginning this procedure.

3.1. Using a T-25 Torx driver, remove the two screws securing the lower heat shield to the crankcase. See Figure 5.

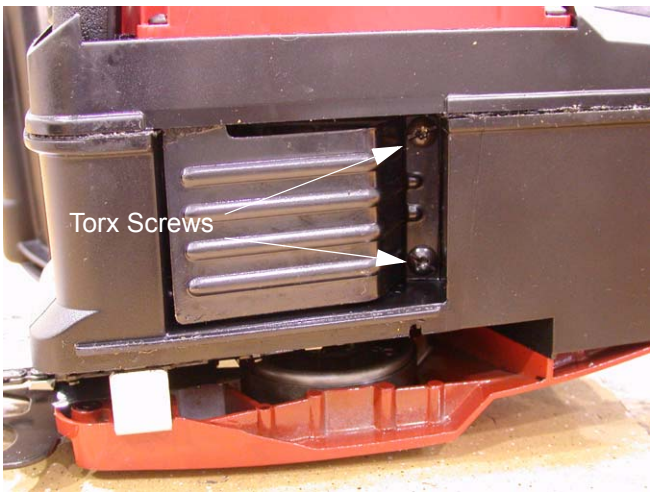

Figure 5

3.2. Using a small screwdriver or needlenose pliers, disconnect oil hose from the pump fitting. See Figure 6.

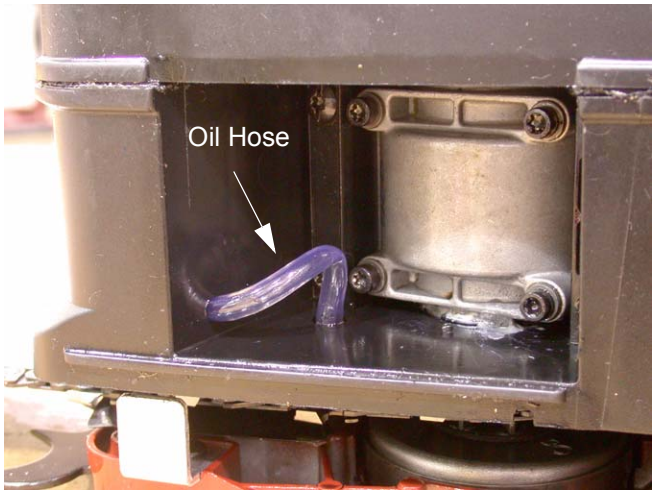

Figure 6

3.3. Using a side cutter, cut the hose as close to the side of the oil reservoir as possible. See Figure 7.

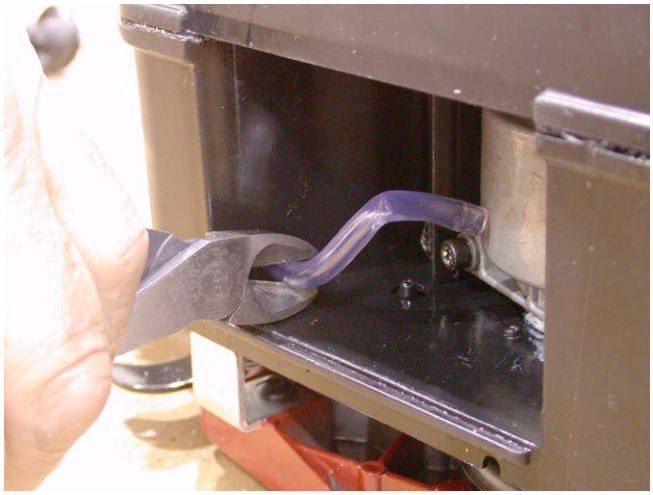

Figure 7

3.4. Using a small screwdriver, push the end of the tube into the oil reservoir.

3.5. Tip the saw over the oil filler or use a wire with a hook to remove the oil filter from tank. See Figure 8.

Figure 8

3.6. Insert a long length of new hose into the tank from the crankcase side and push it into the tank.

3.7. Use a hook to fish the end of the hose through filler opening.

3.8. Install a new filter on the hose end and pull hose back into tank so the filter is positioned in the bottom of tank.

3.9. On the crankcase side, put a loose bend in the hose and cut it so that it fits on the end of the oil pump fitting without kinking.

4. SPARK ARRESTER SCREEN

NOTE: A clogged spark arrester screen will dramatically reduce engine performance.

4.1. Using a screwdriver or drift punch and hammer, flatten the tabs on the lock plate of the muffler assembly. See Figure 9.

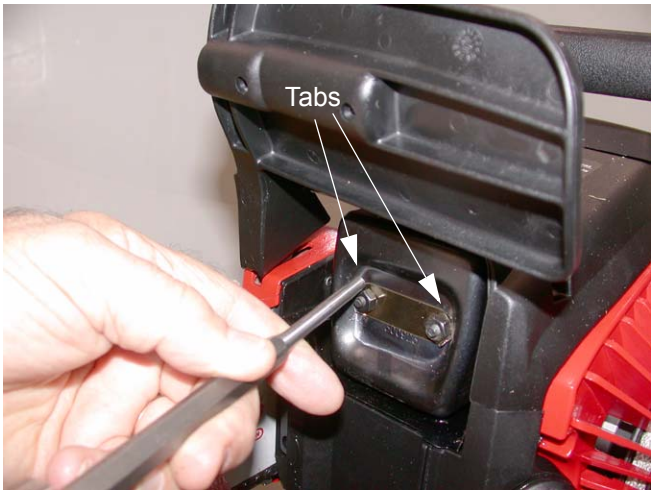

Figure 9

4.2. Using a 10mm socket, remove the two muffler retaining nuts, lock plate and muffler cover.

4.3. Remove the spark arrester screen from the metal baffle. Replace the screen with a new one. See Figure 10.

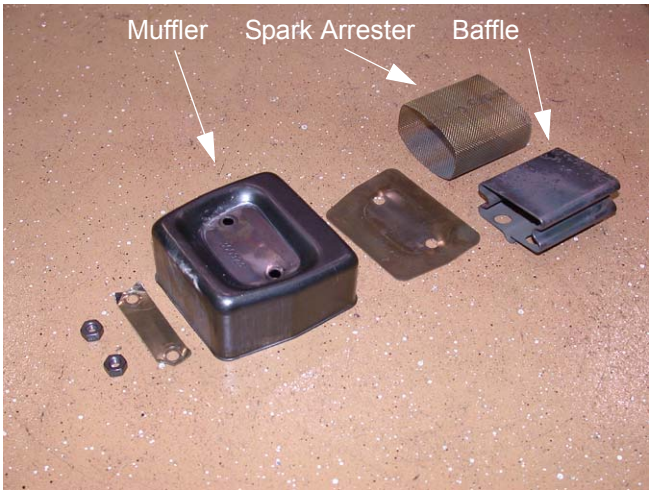

Figure 10

4.4. Reassemble the muffler components and tighten nuts securely.

4.5. Bend the tabs on the lock plate to secure the hex nuts.

5. SPARK PLUG

NOTE: For efficient operation of the engine, the spark plug must be kept clean and properly gapped.

5.1. Push STOP switch up.

5.2. Remove top Cover.

5.3. Disconnect the wire connector from the spark plug by pulling and twisting at the same time.

5.4. Using a scrench, remove the spark plug. DO NOT USE ANY OTHER TOOL. See Figure 11.

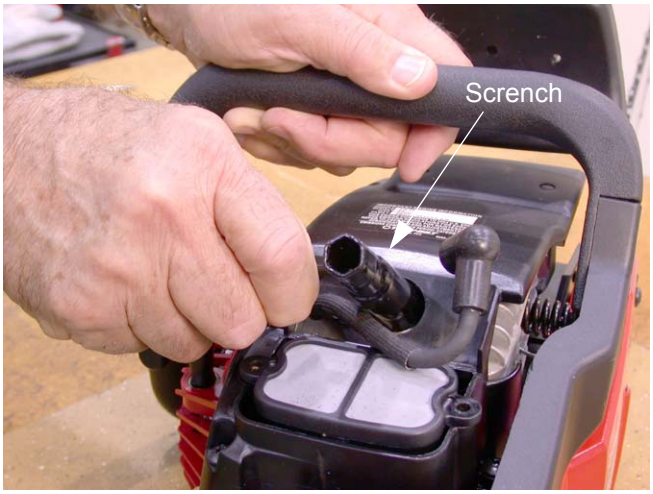

Figure 11

5.5. Check electrode gaps with wire feeler gauge and set gaps to .025" (.635mm) if necessary or install a new spark plug.

NOTE: A resistor spark plug must be used for replacement (part no. 9295-320001).

NOTE: This spark ignition system meets all requirements of the Canadian Interterence-Causing Equipment Regulations.

6. BAR AND CHAIN REMOVAL

6.1. Using a scrench or 5/8” socket, remove the two nuts securing the Chain Brake Assembly to the unit. Remove the assembly. See Figure 12.

Figure 12

6.2. Use the scrench or a screwdriver to loosen the chain tension adjustment ½ turn counterclockwise to take tension off the chain. See Figure 13.

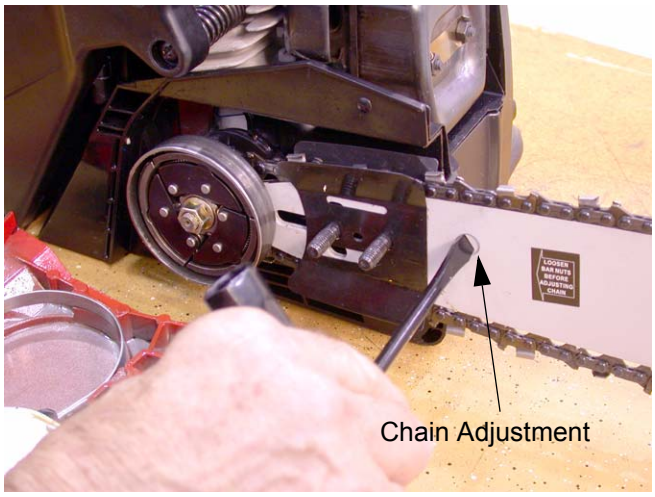

Figure 13

6.3. Remove the chain from around the bar and slide the bar and chain guide plate from the mounting studs.

7. CLUTCH REMOVAL

7.1. Remove the chain brake assembly, bar and chain. See BAR AND CHAIN REMOVAL Section.

7.2. Remove the air filter cover.

7.3. Remove the spark plug.

7.4. Place a length of starter cord in the spark plug opening to ease removal of the clutch/drum assembly. See Figure 14.

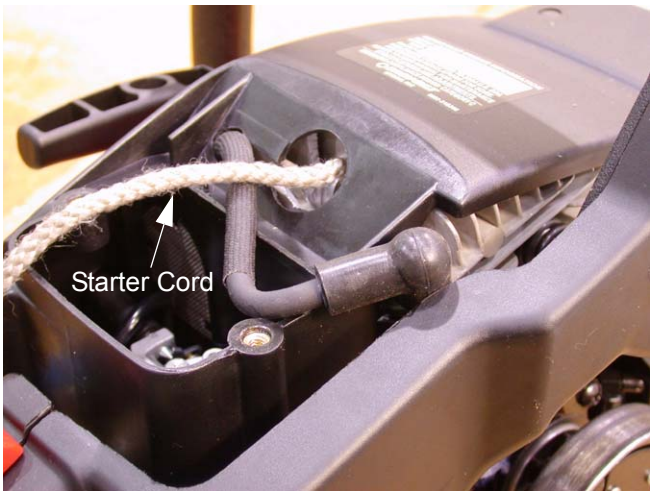

Figure 14

7.5. Using a 13mm socket, remove the compression nut securing the Clutch/Drum assembly to the crankshaft. See Figure 15.

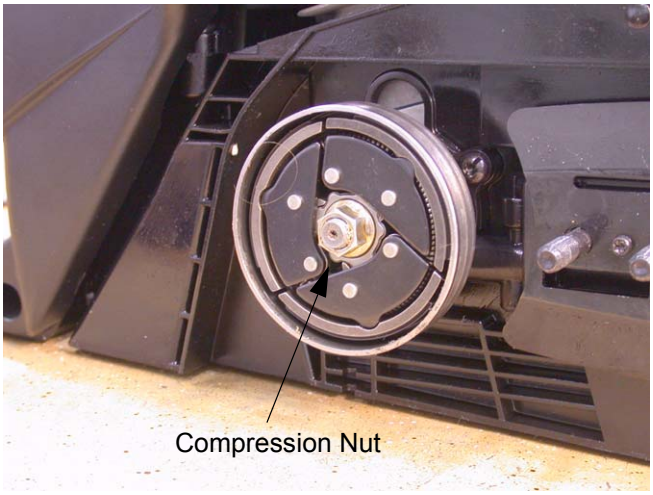

Figure 15

NOTE: The nut is left hand threaded. Turn the socket clockwise to loosing it.

7.6. Remove the clutch/drum sprocket assembly from the crankshaft.

NOTE: There is a needle bearing on the crankshaft the may stay on the shaft or come out with the clutch. See Figure 16.

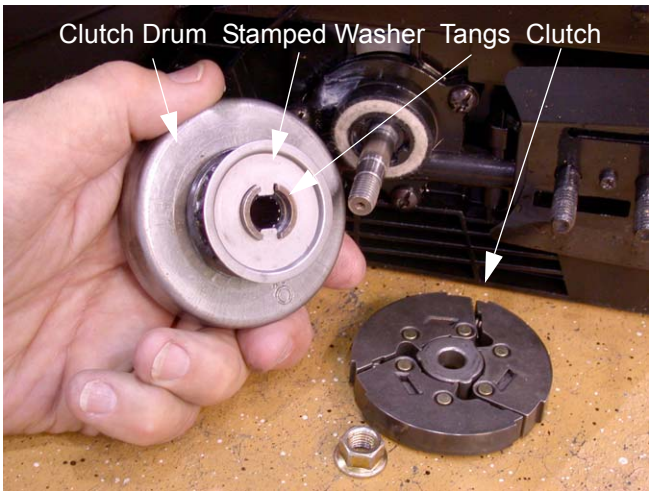

Figure 16

NOTE: There is a stamped washer between the drum sprocket assembly and the housing. Note the orientation of this washer. The cupped side faces in and the tangs mate with the chain sprocket. See Figure 16.

NOTE: The notches in the sprocket need to mate with the tabs on the chain oiler pump.

8. CHAIN OILER REMOVAL

8.1. Perform all steps to remove the clutch/drum sprocket assembly. Refer to CLUTCH REMOVAL Section.

NOTE: There is an adjustment screw for changing the flow of chain oil accessible from under the saw near the drum sprocket. See Figure 17.

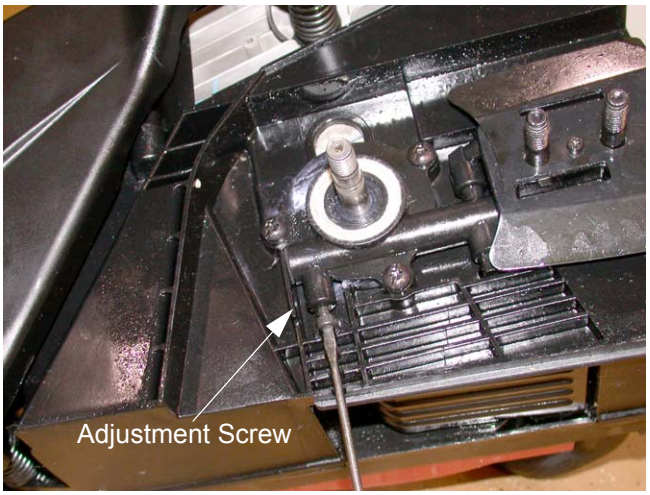

Figure 17

8.2. Using a T-15 Torx driver, remove the small screw securing the flange plate and bar plate to the housing. Set the screw, plate flange plate and bar plate aside. See Figure 18.

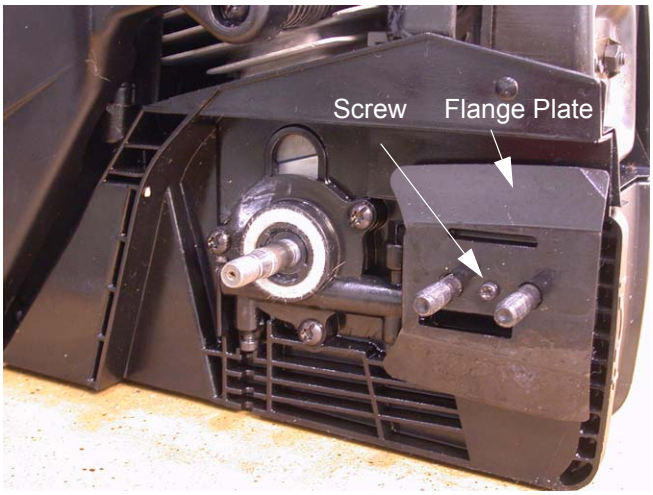

Figure 18

8.3. Using a T-25 Torx driver, remove the 3 screws securing the pump assembly to the housing. See Figure 19.

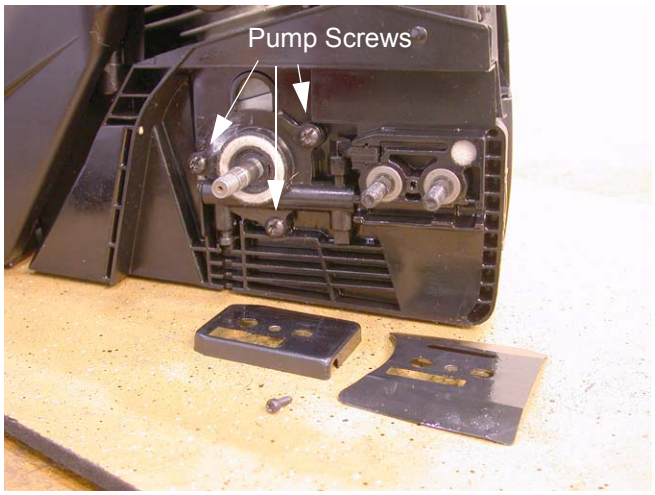

Figure 19

NOTE: The top right screw is longer then the other two.

8.4. Pull the pump slightly away from the housing. The upper oil feed should release from the slot in the housing. See Figure 20.

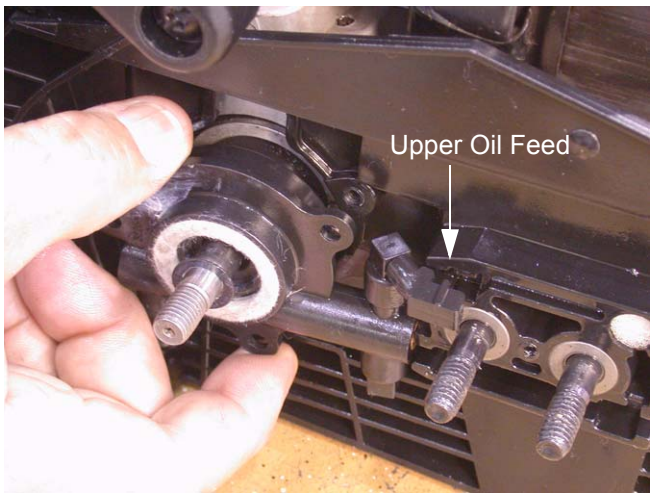

Figure 20

8.5. Secure the clear oil feed tube going to the pump with some form of clamp or tie to keep it from dropping into the oil reservoir when you remove the tube from the pump. See Figure 21.

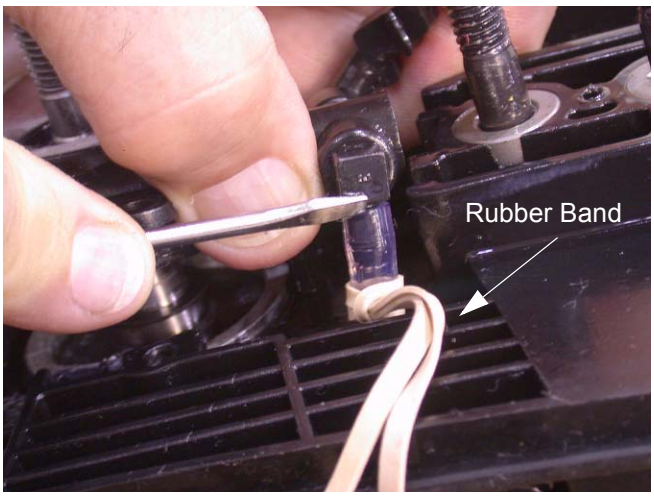

Figure 21

8.6. Remove the tube from the pump assembly.

8.7. Remove the chain oiler pump from the unit. See Figure 22.

Figure 22

8.8. Remove the foam plug at the rear of the pump. See Figure 23.

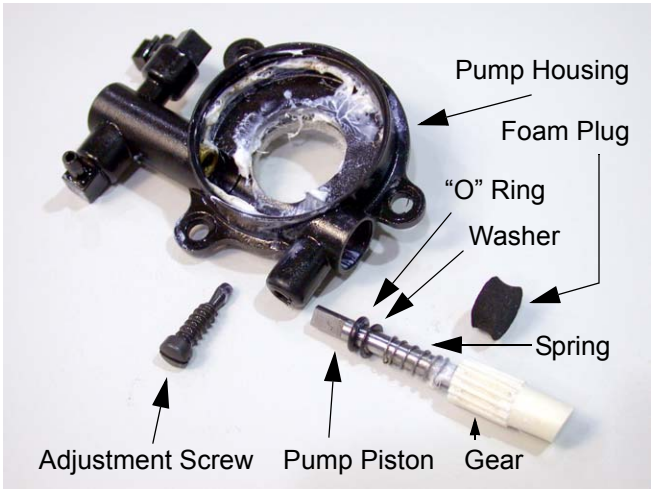

Figure 23

8.9. Remove the flow set screw from the pump.

8.10. You can now slide the pump assembly components from the pump housing. Notice how the set screw affects the depth of the pump piston and adjusts the oil quantity. See Figure 23.

NOTE: Replace the “O” ring and felt washer during service of the pump.

9. STARTER ASSEMBLY REMOVAL

9.1. Using a T-25 Torx driver, remove the four screws securing the starter assembly to the housing. See Figure 24.

Figure 24

NOTE: The upper screw is a machine screw and uses locktite to secure it.

9.2. Remove the starter assembly from the unit. See Figure 25.

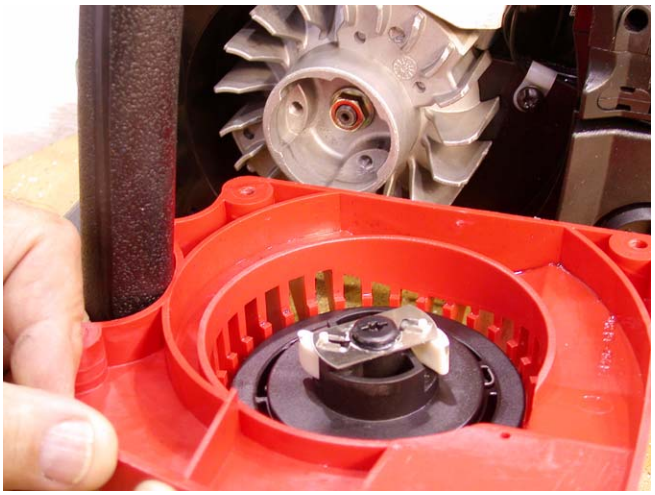

Figure 25

10. SERVICING THE SPRING ASSIST STARTER

The spring assist starting system contains two coiled torsion springs. The standard recoil spring is used strictly to retract the starter rope. In addition to the recoil spring there is an accumulator spring located between the starter rope pulley and the clutch dog assembly. When the starter rope is pulled the clutch dogs engage the flywheel. The flywheel resists turning because of engine compression. As tension in the accumulator spring increases it overcomes the engine compression and rapidly turns the crank and starts the engine.

10.1. To service the starter, use a T-25 Torx driver to remove the screw securing the pawl mechanism and starter cord pulley to the housing cover. See Figure 26.

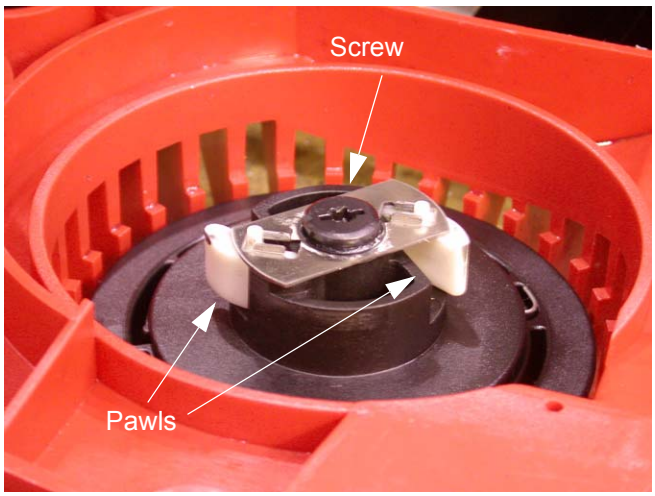

Figure 26

10.2. Note the orientation of the parts. See Figure 27.

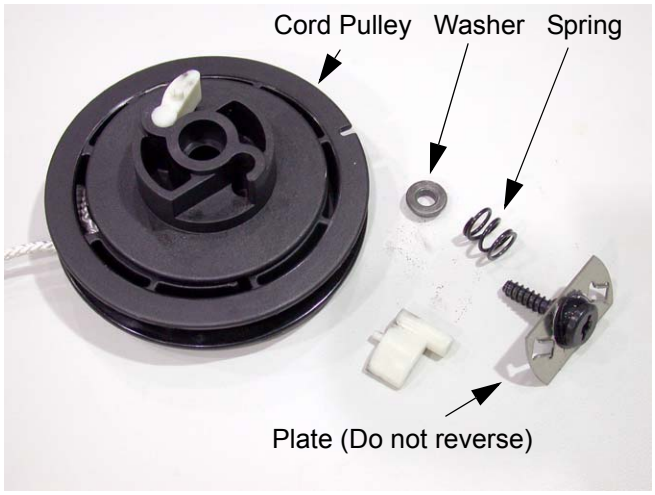

Figure 27

NOTE: If the cover plate is reversed on the assembly, the pawls won't move out and the starter will not work properly.

10.3. Inspect componants. See Figure 28.

Figure 28

10.4. Remove the accumulator spring cover and inspect the spring. See Figure 29.

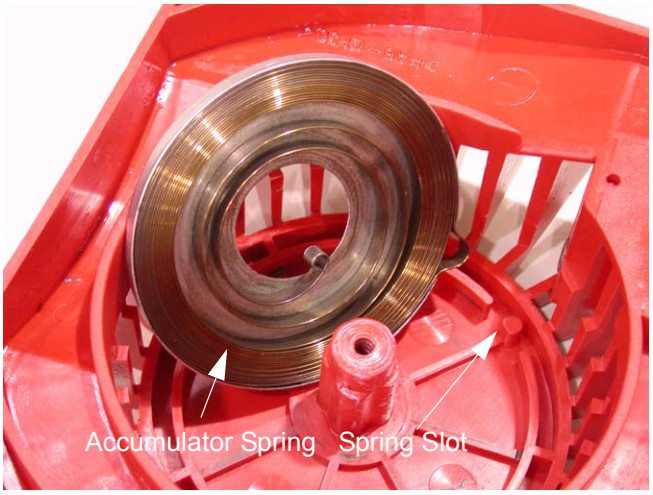

Figure 29

10.5. During assembly, feed the pull cord through the housing cover, knot the cord as shown in the picture and wind the cord around the starter pulley. Place the pulley under spring tension for the last two turns.

11. FLYWHEEL REMOVAL

11.1. Remove the starter assembly following the STARTER ASSEMBLY REMOVAL Section.

11.2. Using a 13 mm socket, loosen but do not remove the nut securing the flywheel to the drive shaft. See Figure 30.

Figure 30

11.3. Loosen the nut until the threads are flush with the end of the drive shaft.

11.4. Place a pry bar between the flywheel and the case.

11.5. Put pressure on the flywheel while tapping the nut with a brass drift and a hammer. See Figure 31.

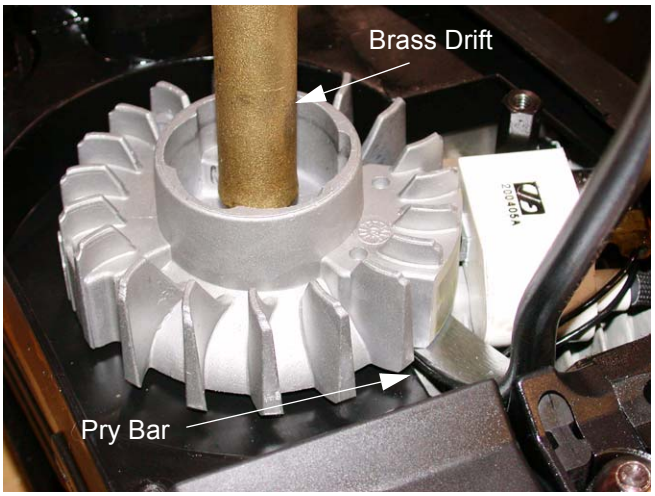

Figure 31

11.6. The flywheel is keyed to the tapered drive shaft. See Figure 32.

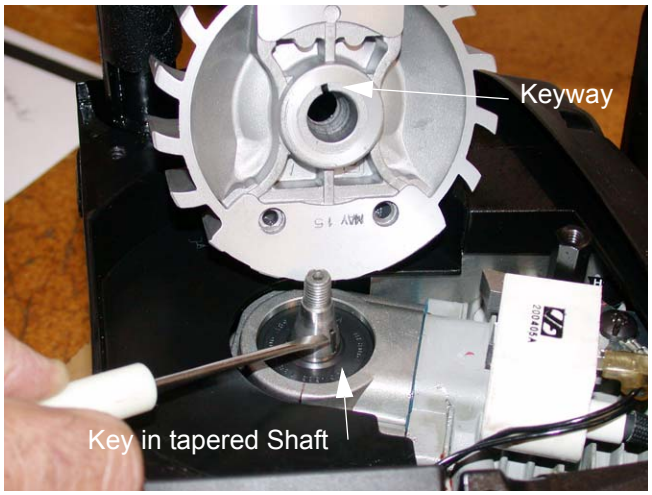

Figure 32

NOTE: Make sure you do not displace the key during assembly.

11.7. Assemble in reverse order of disassembly.

NOTE: Use a feeler guage to properly gap the distance between the coil and flywheel. It should be between .08”-.010” tolerence. See Figure 33.

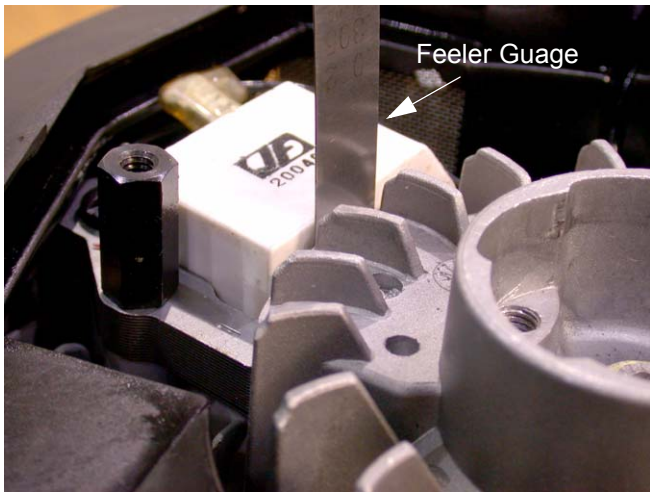

Figure 33

12. HANDLE REMOVAL

NOTE: If the throttle cable breaks, it will be necessary to remove the handle to service it.

NOTE: It will also be necessary to remove the handle in order to remove the caruretor from the unit.

12.1. Using a T-25 Torx driver, remove the lower left handle mounting screw. See Figure 34.

Figure 34

12.2. Remove the mounting screw at the left side of the baseplate. See Figure 35.

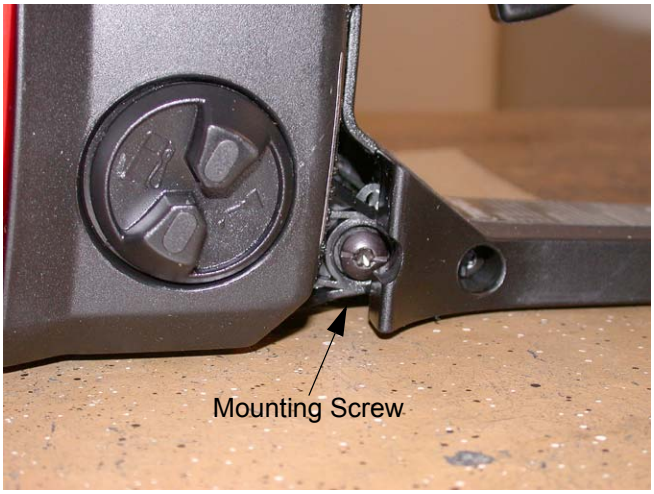

Figure 35

12.3. Remove the screw at the top right side of the kick back lever. Remove the handle from the unit. See Figure 36.

Figure 36

NOTE: Note any different length or type of screws used during disassembly.

NOTE: Note the routing of the throttle cable and electrical wires.

12.4. To service the throttle control, power switch or other handle componants, remove the five screws securing the handle halves together. See Figure 37.

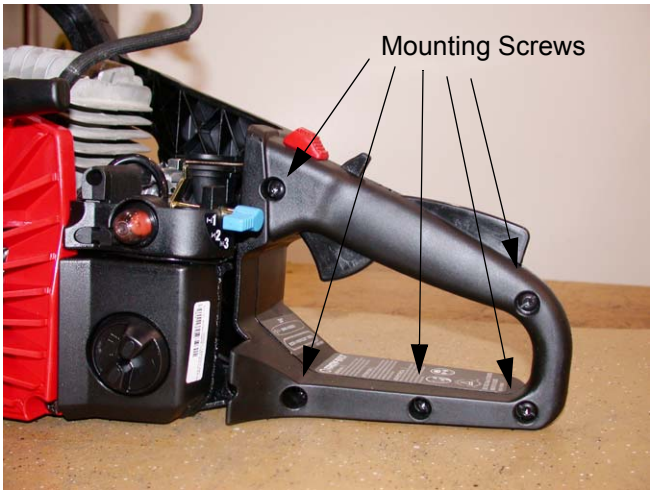

Figure 37

NOTE: Note any different length of screws used during disassembly.

12.5. Separate the handle halves. Note the orientation on all componants of the handle during diassembly. See Figure 38.

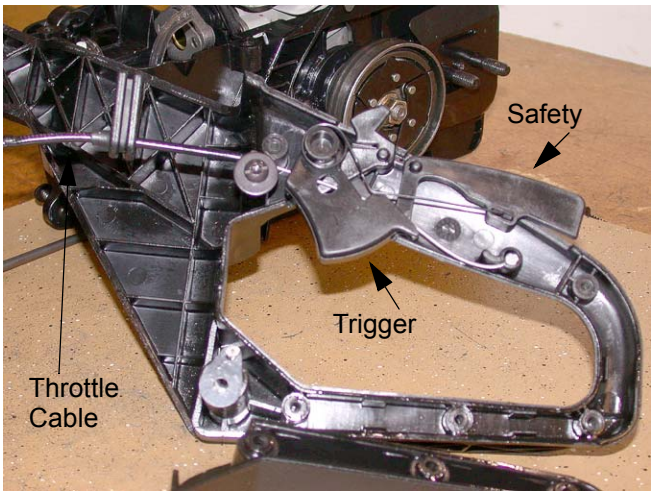

Figure 38

NOTE: During handle assembly be sure to place the wire cable assemblies in front of the springs.

13. CARBURETOR ADJUSTMENT

The carburetor was pre-set at the factory for optimum performance. Only qualified technicians should adjust the fuel/air mixture. If the carburetor becomes gummed up or fails in any way it can be replaced or rebuilt.

14. CARBURETOR REMOVAL

14.1. Remove air filter cover.

14.2. Remove starter assembly cover.

14.3. Disconnect spark plug wire.

14.4. Remove the air filter.

14.5. Remove the spark plug.

14.6. Using a T-25 Torx driver, remove the three screws securing the cover assembly to the fuel/oil tank assembly. Remove the cover. See Figure 39.

Figure 39

14.7. Using a T-25 Torx driver, remove the screw securing the ground wire to the cylinder body. See Figure 40.

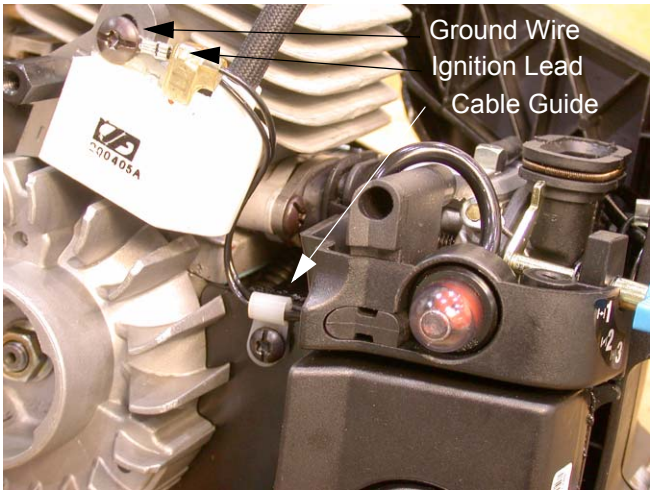

Figure 40

14.8. Using a T-25 Torx driver, remove the cable guide attached to the cylinder body. See Figure 40.

14.9. Disconnect the lead attached to the ignition assembly. See Figure 40.

14.10. Using a T-25 Torx driver, remove the 3 screws securing the handle assembly to the unit. See HANDLE REMOVAL Section.

NOTE: On the right handle and rear handle there is a cable assembly that attaches between

the handle and the spring. Be sure to assemble correctly. See Figure 41.

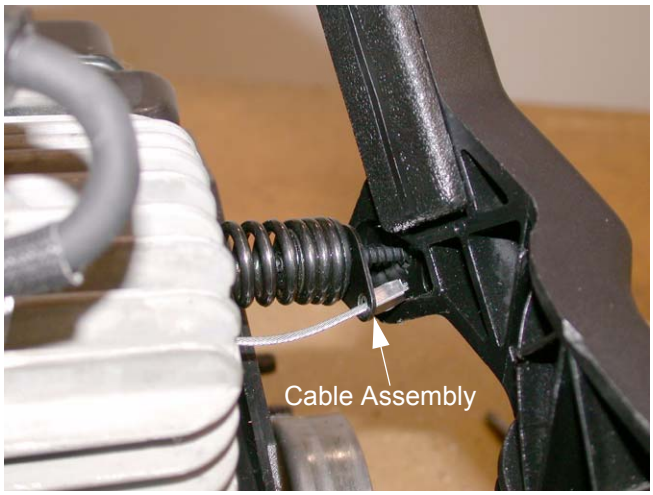

Figure 41

14.11. Remove the two wire leads from the housing groove as you separate the handle from the housing. See Figure 42.

Figure 42

NOTE: The throttle cable will still be attached to the carburetor at this time. It will be disconnected later.

14.12. Using a small screwdriver, pry the rubber seal from above the flex conduit. Set it aside. See Figure 43.

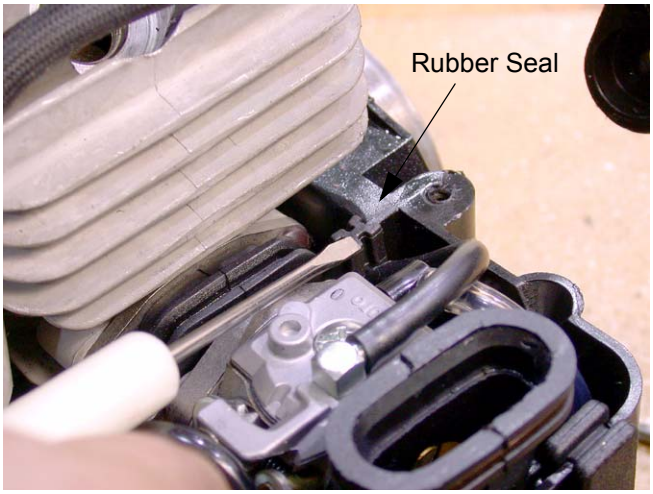

Figure 43

14.13. Using a small screwdriver, pry the flex conduit from the carburetor pulse inlet. See Figure 44.

Figure 44

14.14. Using a T-25 Torx driver, remove the two screws attaching the carburetor to the intake housing. See Figure 45.

Figure 45

NOTE: You will need to flex the carburetor upward at the rear to access the screws.

14.15. Slip the carburetor up and out of the housing. See Figure 46.

Figure 46

14.16. Using a small flat bladed screwdriver, remove the fuel line. See Figure 46.

14.17. As you remove the carburetor, remove the choke assembly and note the orientation of the small wire connector going from the choke to the carburetor. Set the choke assembly and connector wire aside. See Figure 47.

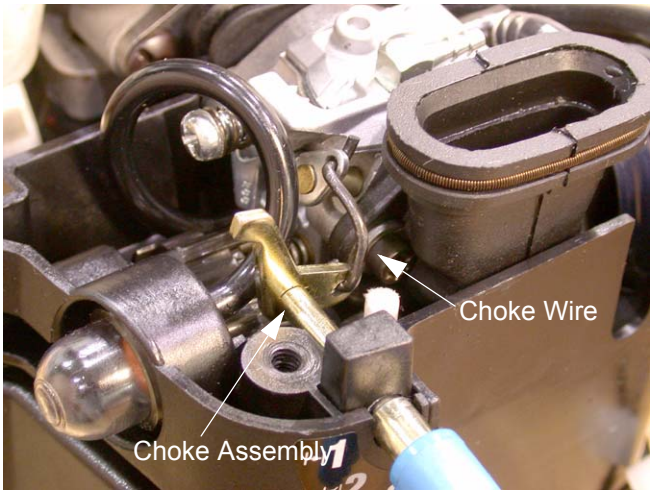

Figure 47

14.18. Slip the throttle cable from its seat and remove the “Z” fitting from the throttle lever.

14.19. Remove the air cleaner boot and two screws from the carburetor.

14.20. Remove the lower black primer hose from the carburetor. See Figure 48.

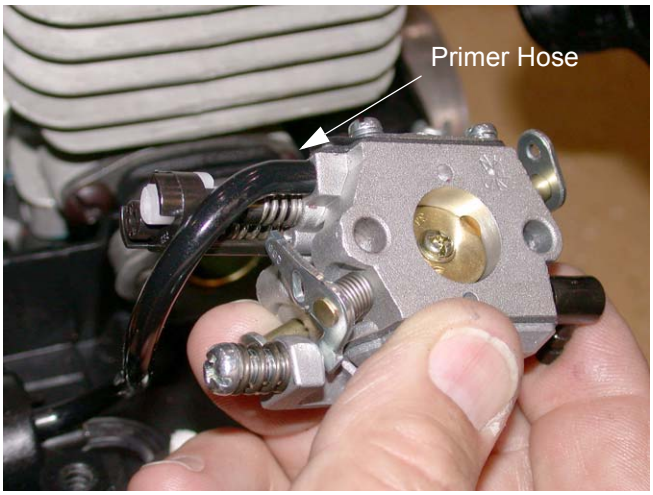

Figure 48

14.21. The carburetor can now be rebuilt or replaced. See Figure 49.

Figure 49

14.22. Install the carburetor in the reverse order of disassembly.